

## SUPPLEMENTARY INFORMATION 1 (TABLE)

## Multi-component neuronal responses

Reference	Task	Brain structure	Initial latency	Main latency	Figure number
Thompson et al. 1996 <sup>1</sup>	Visual search	FEF	45 ms	100 ms	9a
Ringach et al. 1997 <sup>2</sup>	(Orientation tuning)	V1	45 ms	55 ms	3
Kim & Shadlen 1999 <sup>3</sup>	Motion discrimination	DLPFC	~50 ms	200 ms	5, 7
Sugase et al. 1999 <sup>4</sup>	(Face categorisation)	IT	40 ms	120 ms	2a
Shadlen & Newsome 2001 <sup>5</sup>	Motion discrimination	LIP	175 ms	~300 ms	8, 10
Bredfeldt & Ringach 2002 <sup>6</sup>	(Spatial frequency)	V1	36-42 ms	66 ms	3
Roitman & Shadlen 2002 <sup>7</sup>	Motion discrimination	LIP	100 ms	200 ms	7, 9
Hedé & Van Essen 2004 <sup>8</sup>	(Shape discrimination)	V2	40-80 ms	120-180 ms	5
Mogami & Tanaka 2006 <sup>9</sup>	Visual go-nogo reward	IT	~110 ms	~210 ms	7
Paton et al. 2006 <sup>10</sup>	Pavlovian CS+/CS-	Amygdala	?	?	3a, 3b
Roelfsema et al. 2007 <sup>11</sup>	Visual discrimination	V1	48 ms	137 ms	3e
Ambroggi et al. 2008 <sup>12</sup>	Pavlovian CS+/CS-	Amygdala	20 ms	120 ms	3b, 3c, 3g, 4a
Ipata et al. 2009 <sup>13</sup>	Visual search	LIP	25 ms	90-100 ms	3, 4
Lak et al. 2010 <sup>14</sup>	Frequency discr	Barrel cx	140 ms	200 ms	4b
Ipata et al. 2012 <sup>15</sup>	Visual search	V4	50 ms	100-125 ms	3, 4
Peck et al. 2013 <sup>16</sup>	Pavlovian CS+/CS-	Amygdala	90 ms	170 ms	3a
Stanisor et al. 2013 <sup>17</sup>	Operant/Pavlovian CSs	V1	50 ms	120 ms	2b, 2c, 3d
Pooresmaili et al. 2014 <sup>18</sup>	Visual search	V1	50 ms	120-190 ms	2b
Pooresmaili et al. 2014 <sup>18</sup>	Visual search	FEF	70 ms	110-190 ms	2a
Lorteije et al. 2015 <sup>19</sup>	Decision tree	V1, V4	~40 ms	140-180 ms	4
Schultz & Romo 1990 <sup>20</sup>	go-nogo reaching	DA	85 ms	135 ms	11
Waelti et al. 2001 <sup>21</sup>	Pavlovian CS+/CS-	DA	90 ms	150 ms	4
Tobler et al. 2003 <sup>22</sup>	Pavlovian CS+/CS-	DA	80 ms	180 ms	3c
Morris et al. 2004 <sup>23</sup>	Operant probability	DA	125 ms	210 ms	3b
Day et al. 2007 <sup>24</sup>	Pavlovian CS+/CS-	DAvolt	?	?	4b
Kobayashi & Schultz 2008 <sup>25</sup>	Pavlovian discounting	DA	75 ms	145 ms	5a, 5c
Fiorillo et al. 2008 <sup>26</sup>	Pavlovian discounting	DA	105 ms	165 ms	2a
Joshua et al. 2008 <sup>27</sup>	Pavlovian probability	DA	80 ms	180 ms	6a
Nomoto et al. 2010 <sup>28</sup>	Random dot motion	DA	90 ms	250 ms	3
Fiorillo et al. 2013 <sup>29</sup>	Pavlovian CSs, USs	DA	40-120 ms	150-250 ms	7a
Kobayashi & Schultz 2014 <sup>30</sup>	Pavlovian CS1-CS3	DA	85 ms	160 ms	3
Lak et al. 2014 <sup>31</sup>	Pavlovian CSs, USs	DA	75 ms	120 ms	2d, S6a, S9c
Stauffer et al. 2014 <sup>32</sup>	Pavlovian CSs, USs	DA	75 ms	130 ms	5e, 5f, 6b

Abbreviations: FEF: frontal eye fields, V1: primary visual cortex, DLPFC: dorsolateral prefrontal cortex, IT: inferotemporal cortex, LIP: lateral intraparietal cortex, DA: midbrain dopamine neurons, DAvolt: voltammetrically assessed striatal dopamine concentration change. ?: not indicated, CS: conditioned stimulus, US: unconditioned stimulus. Parentheses indicate passive stimulation.

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